Picture by Steven Flanagan

3D
CONSTRUCTION
KIT USERS GROUP

EDITORIAL

Welcome to issue 9 of the 3D Construction Kit User Group Newsletter.

My goodness, doesn't time fly? I have been so busy again this last couple of months that newsletter time has arrived again and caught me on the hop! What with the children being home for the half-term holiday and wanting to monopolise every computer I need to work on, and being laid low with yet another nasty flu bug, I've also had a busy time playtesting the new version of the Kit and, thank goodness, you can read all about it in this issue. Not that I had space to tell you everything about all the new features – there are far too many to be able to include in one review. I was talking to a member on the telephone this afternoon about it and realised that I didn't even mention the ability to have interesting video-type sequences during play, in the review. However, I know that you will all be delighted with Kit2 when you see it. It should be out by the time you read this. Details of how User Group 16 bit members can upgrade are also included at the end of the review. I am grateful to Incentive and to Domark for allowing members of the User Group to upgrade at a greatly reduced price when everyone else has to fork out the full £50 for it.

I should imagine that we will soon have routines in the newsletter to cover all the extra features of Kit2 and I can hardly wait to see them. I think it will take some of you really good programmers out there to discover all the many interesting features and how to use them properly as I haven't had time yet to really make good use of all the many new features within a working environment. Not that you have to be a good programmer to get working on Kit2 as the operating system is so easy to use – just click buttons for most of the new interesting attributes of the objects and you will soon be creating some truly fantastic effects.

I have also now received the results of the 16 Bit competition and the winners of that, and the 8 Bit competition are in this issue – I would like to be a fly on the wall when the winner of the CDTV sees the results – no, I'm not telling here – you'll have to check out the results page to see who it was. There should be some whoops of delight too from all the other lucky winners who get a FREE copy of Kit2! Well done to all of you.

We haven't even had Halloeen yet so you may be surprised if I mention Christmas in the middle of October. However, the next issue of the newsletter (issue No 10) will be out just before Christmas, so I would like to ask our overseas readers to drop me a line to teach me how to write Christmas Greetings in as many different languages as possible. This will enable me to increase my list of seasonal good wishes to cover many more countries. Long time members will know what I mean if they had the last "Christmas" newsletter. While on the subject, would anyone like to have a go at creating a 3D Kit Christmas Tree or a Father Christmas as a screen dump suitable for use on the December/January issue? – Don't panic if you think it is impossible – it was just a thought. As I said at the start of the page, I've had such a lot to do this last couple of months that I have got a bit behind with answering all the many lovely letters and requests for help. Please be patient with me as I will catch up and reply to everyone just as soon as I can. I have forgotten what colour the bottom of my in-tray is! I'll find out shortly – I promise! See you all again in the next issue. Bye for now...

Mandy

LETTERS

Dear Mandy
Thanks for the Newsletter. It's the first newsletter of any usersgroup I know where you get that much information about your program. I too have had the problems Margaret Christmas has with paint programs on the PC. I tried Fingerpaint 2.0 and found out the PCX files saved in Fingerpaint were not supported by the PC Paintbrush standard. Moreover, Fingerpaint doesn't support the screen format used by 3D Construction Kit (it has, for example, 640 x 200 CGA, 3D Construction Kit needs 320 x 200 CGA). So I guess the Graphic Workshop isn't the problem, Fingerpaint is. Before buying Deluxe Paint I tried quite a number of shareware paint programs and with one named Turbopaint I could save in LBM format that I could use in Deluxe Paint, it couldn't use VGA on the other hand. If you like drawing and painting on the PC, you couldn't go wrong with Deluxe Paint though.
        Geert Rayserhove, Damme, Belgium – PC

Dear Mandy
After reading the letter from Margaret Christmas about the problem converting files for use with the Kit, it seemed to me the best bet was to find a program that produces LBM files direct. I've used Graphic Workshop too and it has great difficulty converting files to IFF (which is the Amiga Deluxe Paint format and meant to be the same as LBM; though I wonder?). This difficulty seems to be with the colour palettes. A shareware program which creates drawings and outputs LBM is Turbopaint. It also imputs or outputs GIF and PCX files so can be used to convert too. I've tried it on 256 colour VGA files but these don't appear correctly in the Kit border and the only format which seems to be satisfactory is EGA. It can also create CGA files so it covers all formats the PC needs. Anyone who would like a copy can send me a blank disk and a stamped envelope and I'll copy it for them (3.5" preferably, though I can manage 5.25" if necessary). As Incentive gave us complete control over the 256 colours we use in our datafiles. I suspect it will be very difficult to load in a 256 colour border and have it appear the same in the Kit. This is because the two palettes involved are extremely unlikely to be the same – if anyone has worked around this problem, I would like to know. I don't know if it has been mentioned in previous newsletters but there are two SUPERSCAPE demo's available for VGA hard-drive PC users. One is a benchmark for the display speed and involves a 3D animated sequence of a spinning computer and falling letters (!). The other an interactive virtual reality where you either guide a man around an industrial park and explore the vehicles and buildings; or go off on your own. I can supply copies of these too if requested as they are in the Public Domain. Keep up the good work on the newsletters – I wait eagerly to find out what 3D Kit II has to offer!
        Nigel Alefounder – PC
        23 Aston Close, Oswestry, Shropshire, SY11 2XU

Bore Da, Mandy Fach
That's about the extent of my Welsh. "Thank God!", I hear you say. Can't speak any Portugese at all, so you will have to say hello to your long suffering husband for me, and with twits like me taking up so much of your time, he must indeed be long suffering, and I am, without a doubt, a twit. To business! Although I have been a member of the "Club" for some months I have not found time, until this recently to do much except read the newsletters with avid interest. Oh I did try the Kit Game but didn't get very far. Wasn't surprised – know I'm thick. Started to get to grips with a few little routines

this weekend. Wanted to create a text window on an instrument. Remembered seeing your answer to this in a previous copy of the newsletter so I dug it out. You said to go into the Kitgame and crib from that. Did so, used the crib - spoilt the game for me - never mind - I couldn't have played it anyway - no messages! The disc has been write protected from the moment I received it, so this is nothing I have done to it as I use a copy to work from. So here I am, no game to play, no messages to copy from, no way to write messages to my own instruments and another thousand questions to ask. What a life, ain't it? I'm enclosing my original disk in the hope that it can be replaced with one that I can crib from. Just one more thing. From the tips in the newsletter I get the sneeking feeling that an "intelligence potion" must have been packaged with the Kit. If this is so - mine was missing! Any chance of getting one of those as well? One last thing, I have created a KEY in area 1, each section of which is conditioned to make the whole key (group 33) invisible. In area 2 I have a door (cuboid 9) which I want to set so that you can only open it if the key (32,1) is invisible. I have tried many calculations and thought the following might work but it doesn't!

```
IF ACTIVATED?
AND INVIS (32,1)
THEN INVIS (9)
ELSE IF VIS (32,1)
THEN VIS (9)
ENDIF
ENDIF
```

The door (9) becomes invisible whether I have the key or not - HELP!
Pete Spooner, Abingdon, Oxon - ATARI ST

By the time you read this, Pete, your replacement disk should be with you and working fine. Nice thing about Incentive is their excellent after-sales service, these days it is nice to know that someone like our Ian Andrew puts that in his top priority list and a comfort to everyone should anything untoward happen to their programs. Unfortunately Ian didn't put an "intelligence potion" in the package - he kept that for himself! Looking at your condition, Pete, I can see that there are a couple of vital question marks missing from it and it is a bit too long - you don't need the extra line 4 either. The condition should work if you use:

```
IF ACTIVATED?
THEN IF INVIS? (32,1)
THEN INVIS (9)
ELSE SOUND (4)
ENDIF
ENDIF
```

There you are cariad bach, that should work for you.............Mandy

Dear Mandy

I am about to treat myself to a +D interface for my Spectrum (grey +2), and wondered if anyone has ever customised the 3D Construction Kit to work with disk. I wasn't meaning just transferring the Kit itself to disk, by the way - what I had in mind was, could its internal load and save options for game data be made to work with disk instead of tape. I would find this very helpful if it was possible, but I realise this may not be at all easy since the tape operations are implemented in machine code. Have you had any other enquiries

about this? By the way, did you receive my new subscription for the next six Newsletters? The only reason I ask is because I have not yet received the next issue but perhaps it is simply not due out yet? I can never remember whether they arrive at the end or the beginning of the two-monthly period.
Miles Kinloch, Edinburgh - SPECTRUM

No, Miles, I haven't heard from anyone on the subject of the +D in relation to the Kit before, but perhaps someone can write in with the information you need and I will pass it on. I couldn't decide on whether to send out the newsletters at the start or the end of the bi-monthly period either so I plumped for the middle! It is a bit flexible though, sometimes it will arrive early and, if I am waiting for some piece of information in particular then a trifle later. They always arrive though!......................................Mandy

Dear Mandy

I have been lucky in getting to grips with the Kit and have found no real problems so far. I worked out the ones I had with a bit of trial and error. I have used your idea for the User Group game which I have now completed. My version has a few surprises such as spikes emerging from the floor in the Great Hall and a monster awaiting around a corner in the Solar Room. I also used "A1 Entrance Hall" as the outside of the castle area. One of the problems there is finding out how to cross the drawbridge over the moat which surrounds the castle. You have to activate the portcullis to gain entry to the castle. The drawbridge has to be lowered over the moat. Anyway I am pleased with the newsletter but (moan, gripe, ha ha), it could be a lot bigger with more info inside it, especially the routines section. I intend sending in routines for the newsletter but I don't know if you want them on disk or on paper? I was also thinking of putting a few useful objects on disk for people to use if they want them for free, but I don't know how they would go about getting a copy of the disk.
Anthony Hartley, Lockwood, Huddersfield - ATARI ST

The size of the newsletter really depends on you all sending in material to pad out the pages. As I've said before, the more material I get the bigger the newsletters will be. Contributions can be sent in on paper, handwritten or typed - it doesn't matter which. I would like more routines for the 8 bit section as 8 bit readers seem to be rather backward in coming forward when it comes to sending in items for the newsletters. All the enthusiasm, apart from a few dedicated 8 bit members, seems to come from the 16 bit owners. It would be a shame if the 8 bit coverage fell off completely wouldn't it? I would hate to see that happen. I am glad you have found the User Group game useful and that it has given you ideas for improvement - that was the intention. I hope to continue with the game but would love more ideas from readers to give me inspiration! When your objects disk is ready you can either send it in for inclusion in the PD library or I can let everyone know where to send for it in the same way that Mr Alefounder suggests in his letter......................................Mandy

Dear Mandy

I've nearly completed a, I hope, good flight simulator and I am working on an adventure game. But it is very frustrating if each time I am working on a game when, after completing the dullest part - the paper-phase - of the game development and after some weeks in front of the monitor, I get the message "unknown error" or a guru meditation. Another bug, and more frustrating that the other, happened each time I tried to make a stand-alone program from my flight simulator. For

some reason the view window on the stand alone game is black and I can't see the surrounding objects. I have made stand alone games before with no problem and I don't think it is a mistake that I have made. Can you help me find out what has gone wrong?

Thomas Stufe - AMIGA

Dear Mandy

The last time I wrote I enclosed a copy of my PD game "Spielraum". This time, I enclose the sequel, entitled "Kakrivs". However, I do have a problem with this. As the program currently stands it has to be loaded into the 3D Kit before it can be played. Everything appeared to be operating okay but when I tried to make the environment into a "stand-alone" game a strange thing happened: Upon loading the finished game I found the view-window screen colours had become corrupted in strange ways! I know that I am not the only one to suffer this problem - it was first reported - to my knowledge - by David Sambrook with his game "The Maze", I wonder if you would be able to use your contacts with the Kit creators to see what could be causing this problem? Incidentally, it never occurred with "Spielraum", so I'm not quite sure why it should occur now. It must be something to do with the new routines I've used, or something! I'm still using version 1 of the Kit (the one I can't back up). I wonder if this is a bug that has been solved in the newer version of the Kit? If so, I had better trade-in my disk for the newer version! It is a shame about this bug, because, obviously, it would be nice to be able to distribute the game as widely as possible after so much work has gone into it, but as it stands, I can only offer it to other Kit users, if you print this, I would appreciate it if David (assuming he is still a User Group member), could contact me if he has solved the problem, offering the solution! After all, that is what a User Group is for! If he does, and has solved it, he is welcome to a free copy of Kakrivs! Now on to other things, I know you have just run an 8 bit competition for newsletter covers, but what about using screen shots from the PD library too? I know I, for one, would be delighted to have screen-shots from my environments used, and I'm sure others would, too. Not only that, but this would also give potential buyers the chance to see the quality of the games/environments on offer.

Peter D Ward, Dartford - ATARI ST

When I first heard about the fault from David Sambrook, I thought it was just a fault with David's program alone, not a bug and sent David's datafile to Paul Gregory at Incentive to take a look at. I heard from David some time later that Paul had solved his problem and, although I didn't receive an updated PD disk from David, assumed that everything was okay. From your letter and the preceeding one I now see that this could be either a fault in the program itself or perhaps somehow you have both done the same thing as David. Even if it is a fault of your programming we had better find out what happened so that we can warn everyone else about it. If you would like to send me your datafiles I will pass them on to Paul for him to look at and perhaps we can find out just what is happening. It isn't a fault with just version 1 of the Kit as Thomas Stufe has been using version 2. Also both David and yourself use Atari ST whilst Thomas uses the Amiga. I am anxious to get this sorted out and will report back when I get some news. I would also like to hear from anyone else who has experienced similar problems in making stand-alone games. Nice idea about the screen-shots. If anyone would like to send some in then I will use them for cover pictures with pleasure. Thanks also, Peter, for your hints and tips, they will appear elsewhere in this newsletter....Mandy

Dear Mandy

Here I am again. My apologies for all the time of silence from me but so many things have been happening this year. (My"PiCcino" among a change of mainboard - from 386SX to 486SX - and damage to the video monitor set me back for three months). However, here is my subscription for another year - I still avidly read the newsletters with great interest and found the routines and ideas very useful for a game I have begun. I'm sorry I didn't participate in the 16 bit competition but maybe you have something boiling in the pot for us 32 bitters. I am excited about 3D Kit II, having read a lot about it. I have a SoundBlaster Pro and hope that the new version of the Kit will be compatible with my card. I would like to be useful to the User Group so will offer my services as a playtester. Before I close I would like to express my compliments to you, Mandy, and to all your collaborators, for the Newsletters - they have now become part of my life. Now I must go but... I'll be back! (Who said that?! Maybe Arn... Sw...!). See you again soon! Ciao.

Giorgio Oliveri, Genova, Italy - PC

Hi, Giorgio! Nice to hear from you again after so long. I hope all your troubles are over now. Good luck with your new game. Ah, another Arnie fan! What a hunk! He can be back anytime as far as I am concerned! Ciao...Mandy

Dear Mandy

I have been meaning to write to you for a very long time, and everytime you ask for contributions in the newsletter I feel really guilty. However, I'm really busy with my University studies and have not had time to spend on the Kit or send in any news since my Christmas holidays! (our Summer ones as well!). But now my subscription needs renewing I am forced to write to you. When I first got the Kit I had so many ideas for games. My first effort took me about a month to do, but has been left for almost a year just needing a few finishing touches. I'm attempting to get these done very soon and then I'll send the game to you. I'm afraid the programming is a bit shoddy as I just blindly went into it like a bull at a gate, so there won't be many useful procedures, but I think the game has a few good ideas in it (some of which have since been sent in by other users, but I didn't copy them really). Although I haven't been able to use the Kit for ages, I still enjoy reading the newsletters and looking forward to when I can next get back on my computer. The index was a great idea and will come in very handy when I get back to work. A few ideas I've had for games include a P.O.W. type escape game complete with tunnels and hidden doors/compartments. A murder mystery taking place in a cluedo-type house, with secret passages and moving bookcases etc. A Doctor Who type game or Back To The Future part 6 with seperate loads, as different times with landscapes to match. An exploration game taking place in a sunken ship. There are numerous possibilities for detective games. A nuclear reactor on the verge of meltdown needing someone to get the coolant rods down. Games on space stations. Games taking place in hotels. I hope these will give inspiration to others. I tend to get inspiration from movies. Just reading through my letter I realised I must sound like a know-it-all, but this couldn't be further from the truth. I'm hopeless at FCL programming so I am begging all you intelligent 8-bit programmers out there to keep sending in routines. Here are a few things I have thought of incorporating into games but have had no idea how to do them. Perhaps other clever 8 bit members can send in routines to help me out. I would like to know how to: move from one area to another while keeping the same co-ordinates like "Driller", when you fly into

a blank wall at the right or left side of one area and arrive in the next area at the same height at either the right or left side. When I go from walk mode to fly mode during a game (eg. picking up a jet-pack), suddenly the scale changes and I move very slowly. Is there anyone who can help me on this one as it is driving me mad. Is it possible to get a percentage rating for nearness to a point such as the drilling process in "Driller"? Is it possible to simulate a large outside area, such as outside the pyramid in "Total Eclipse"? I know this sounds really easy, and is probably only a tiny procedure, but would someone supply a listing for making something move a bit, dependant on time (such as the eclipsing sun in "Total Eclipse"? There are other problems I have, but this letter is already far too long. I'm sorry, but all the questions and ideas have been building up over the last 10 months! I hope you won't think me impertinent to suggest this, but I did think that maybe runners up in the 8 bit competition could be given one of the games from the User Group collection such as one of those that went on the front cover of Zzap 64! It can be very hard to get that magazine over here and I'd love to get my hands on one. Anyway, just an idea.
David Lacey, Tasmania, Australia - C64

Thanks for all the great ideas, David, I am sure they will be a source of inspiration to other members. Now 8-bitters, there are a few problems for you to solve in David's letter. Let's hear from you with your routines and ideas to help David program them into his game. It will also help everyone else if they were printed in the newsletters. As everyone was a winner in the competition there were no runners-up! I wonder if the cover tapes you mention are my games? If so I'm afraid you are going to be disappointed, David, as they are not 3D Kit games but text adventure games that I wrote long before I got my hands on the 3D Kit (I did use one of Incentive's other products though, the Graphic Adventure Creator). The rights to use the games on the cover tapes for a month each were given to Zzap but the games themselves have been passed to another software company to sell so I can no longer supply them. I closed down my software company in June and handed everything over to another company......................Mandy

Dear Mandy
I own an Amstrad CPC6128 plus with disc. I have no other extensions such as Rambox or extra memory. Will you help me and my mates work out how to make score if we shoot an object, how to make energy and how to make ammo. I would be very grateful. Thanks for all and please make me a list of all the variables. In the magazine 3D Kit Club please put how we can order your own magazines as lots of peaple would like to know. Please put all the information in the magazine.
Alan Holloway, Bexley Heath, Kent - CPC6128

All the points you are wondering about have already been covered in the newsletters, Alan. If you send me a stamped, self-addressed envelope I would be delighted to photocopy and send you all the relevent extracts from the newsletters to answer your questions rather than re-print them all here. I won't ask you to buy all the back issues as I know that you only have your pocket money. I think the magazine you mean is Adventure Probe? Actually I have now passed on the editorship of that to Mrs Barbara Gibb of 52 Burford Road, Liverpool. If you send Barbara £2 she will send you a sample copy and details of how to subscribe..................................Mandy

SORRY NO MORE ROOM FOR MORE LETTERS THIS ISSUE
MORE NEXT ISSUE - DO WRITE IN AS I'D LOVE TO HEAR FROM YOU!

COMPETITION RESULTS

16 BIT COMPETITION RESULTS

Here are the results of the competition which was held in the APRIL/MAY issue (No 6). Which was for members to send in objects to be published on an objects disk to accompany 3D Kit II. Designers of the selected objects would each receive a copy of 3D Kit II and the best object selected would win a CDTV.

The lucky member whose object was considered the best by the judges, Domark Ltd, and so wins for himself a fabulous CDTV was:

PETER D WARD of Dartford Kent

Congratulations Peter, I sincerely hope that you get hours of fun and enjoyment out of your CDTV - very well done indeed!

The other lucky winners who sent in objects for the competition that were selected to go on the objects disc, and who each receive a free copy of 3D CONSTRUCTION KIT II are:

ROBIN BALL of Devizes, Wiltshire.
MIEKE VAN DER POLL of Zevenbergen, Holland.
MARC EPSTEIN of Cyprus Gdns, London.
LIAM JOHNSTON of Belfast.
STEPHEN DAY of Durar Of Appin, Argyll.
SUE MEDLEY of Sidcup, Kent.
MARTIN SULLIVAN of Reddish, Stockport.
S. SHIELD of St Helier, Jersey.
S.M. HINDLEY of Cropwell Bishop, Nottingham.
STEVE ROGERS of Bradwell, Milton Keynes.
and
STEFAN GOETZKE of Bremen, Germany.

Congratulations to you all, you should be receiving your 3D Kit II shortly - I know you are all going to have hours of pleasure in store!

8 BIT COMPETITION WINNERS

8 Bit members were invited to send in printouts or hand drawn copies (if they didn't have a printer) of a suitable Kit-created cover picture for the front of the Newsletter.

Not many entries for this competition, only four (and there were SIX possible winning prizes!). However, well done to the following who each receive a copy of VIRTUAL WORLDS (Driller, Total Eclipse, The Crypt and Castle Master) plus a year's free membership of the User Group. They are:

RICHARD COLE of Co Durham. SPECTRUM.
STEVEN FLANAGAN of Sheffield. C64.
YANNICK GOUR of France. CPC464.
and
DAVID LACEY of Tasmania, Australia. C64.

Congratulations to all the winners of both competitions. I was sad to see so few entries to the competitions as I had hoped to run more in the future. Maybe you don't like competitions? Let me know what you think about future ones. I'll leave the decision to you.

THE 3D CONSTRUCTION KIT II

Imagine, if you will, some changes to your datafiles - take your favourite one for example - imagine walking through it until you come to a door that tantalizingly fades and appears before your eyes but, no matter how you try you cannot get through it. Imagine that your buildings have windows that you can actually see through, the glass being just a hint of colour that is transparent and the contents of the buildings visible but inaccessible - just like real windows. Imagine a sun in the sky and columns topped with globes all made with real spheres. Imagine that as time passes evening draws on and as night approaches the sky darkens to a deep velvety black which is relieved only by the occasional flash of lightening as a storm rages overhead. Imagine that your objects can suddenly become wireframe, just like the objects in Elite or Mercenery and also imagine having the ability to make a solid object become intangible so that you can walk right through it. Imagine that you enter a vehicle in your landscape and your border changes automatically to represent the controls of the vehicle and the view from the windscreen.

With Kit I it would be impossible but with Kit II all these functions are easily available and easy to implement (and I do mean EASY). These are just a FEW, a very few of the new features that are available with the long-awaited 3D Kit II. I would need pages and pages of space to be able to tell you about all the new features that will be available to you but having to confine myself to a couple only, I will try to cram as much in as possible.

Loads of new commands carry your programming of the Kit further than you would imagine. You have the ability to have strings which will say things like "Hello" and you can add to them to say "Hello there!" You can print messages and numbers to screen with the ability to set the parameters for the coordinates that you wish. You can change fonts and text colour and so much more. There are PROCEEDURE CONDITIONS (like subroutines). Loads more mathematical procedures including COS, TAN, SQUARE ROOT etc. You can set the size of objects in different areas of your world. You can RESET objects, object colours, areas and worlds. You can force a redraw without a recalculation of the Freescape View, change the sights for shooting. If your game gets too big there is the ability to load another world so that you can have part 2, 3, 4 etc. Load in different borders as you wish, check if an area has been previously visited or an object touched. You can lock the players viewpoint onto an object or use the GOTO CAMERA to send the player somewhere if you wish.

There are loads of exciting new conditions such as the ability to plot a brush, animate a brush, set the sky, ground and object colours. The list is endless. You can open and close files and write numbers and strings to the opened files. Perhaps if I take you through some of the different commands you will discover with Kit II, you will understand what I am trying to tell you about.

As well as all the normal commands we are familiar with from Kit I, we come across CLIMBABILITY, FALLABILITY, ACTIVATERANGE, LOADSCREEN, LOADWORLD (eg. LOADWORLD("PART2.KWD)), BRUSH (eg. BRUSH(1,50,50) - plot a brush whose number is the first parameter at coordinates specified by the second and third parameters to the foreground screen). There is STARTANIMBRUSH, STOPANIMBRUSH, ANIMBRUSHACTIVE?, BORDER1 (or BORDER2 etc - display the border whose number is the first parameter), SETPIXEL, GETPIXEL, DEFFIRE (define the fire line),

DEFSIGHTS, DRAWONLY, PCHAR (eg. PCHAR($41,10,10) - print the character specified by first parameter to the screen at position specified by parameters two and three), PNUMBER, PSTRING, CIRCLE (draw a circle with coordinates specified), DISC (draw a disc with specified coordinates), LINE, BOX, FRAME, (all with coordinates as with CIRCLE), SETFADER, MAKEWIRE, MAKETAN/INTAN, DEFARRAY (define array), RANDOM (eg. RANDOM (100,V20) - place a random value between 0 and the first parameter into the variable whose number is the second parameter), SETBIT, BITCLEAR, SHIFTLEFT/RIGHT, MULT, DIV, SIN, COS, UNDEFARRY, SWAPVAR, SETSTRING, ADDSTRING, SWAPSTRING, STREQ?, TOASCII, GETFADE, DISTANCE, MAKEWIRE, MAKESOLID. Whew! The list is endless!

I had better stop the list of new commands there so I have room to tell you about the objects. New objects available include a SPHERE and a FLEXICUBE! I mention the latter as this is the object that I have had the most fun with. It is difficult to describe really, it is a cube made up of lots of shapes, each with POINTS so that it can be stretched and shrunk into almost any shape you might wish to see. I pounced on the sphere immediately thinking that I could now make a vehicle with wheels but was disappointed at the results. What I ended up with was a box (my car) with four footballs at each corner! The sphere cannot be used for wheels but can be used for loads of other items. They make great bushes in pots when positioned on top of upturned pyramids!

I especially liked the ATTRIBUTES menu of each object. There is, apart from the usual attributes, the ability to select at the click of the mouse button (rather like a push on, push off panel), attributes such as TANgible and Intangible, WIREframe and solid, SNS (make object a sensor) and, most useful indeed is TRN (make the object into a transporter). The latter means that once you have set the attributes so that the object becomes a transporter you just need to enter the object condition with a simple GOTO (2,4) and when you collide with it the program takes care of the rest. Via the attributes you can also get to the DEFAULT menu for that object. With the attributes you can also use the FADE button which will give you FADEIN, FADEOUT and FADEBOUNCE so that you can easily make objects appear slowly, vanish slowly or gradually appear and vanish continually. The fade value can also be set as you wish.

In fact, even though I have only managed to tell you about just a fraction of all the features contained in Kit II, you can already see that the programmers have taken all your suggestions for improvements and what you would like to see on board. To sum up: I think you will be delighted with the new version, your programs will be much easier to build and with all the added flexibility of the new commands.

Best of all, being a member of the User Group means that you will have the opportunity to upgrade to the new version with a saving of around £30! Atari ST, PC and Amiga owners of the User Group just need to send their old program disk/s together with a cheque/postal order for just £20 (made payable on this occasion to DOMARK LTD) and send them to me at the usual address. In return I will send you the complete new package (box with disk/s, video, manual, extra manual etc), and you are fully equipped and ready to start programming environments like you've never been able to do before! Do remember to enclose your name, address, computer, cheque payable to Domark Ltd and your disks only (no need to enclose the whole box), and I will take care of the rest! The long wait is over, folks! I wonder which one of you will be the first to send in a routine for Kit II?! The race is on!

HINTS AND TIPS

HINTS by *Peter Ward* - ATARI ST

For people who use DEGAS ELITE to make borders, this is pretty common knowledge now, but there may still be one or two people :who do not know of this undocumented function. In TEXT mode, holding the CONTROL key down while pressing olthers can produce some interesting - and useful - characters. Most useful for 3D Kit users are ARROWS - CONTROL/A = UP ARROW, CONTROL/B = DOWN ARROW, CONTROL/C = RIGHT ARROW, CONTROL/D = LEFT ARROW. Other interesting ones are CONTROL/I = CLOCK FACE, CONTROL/J = BELL, CONTROL/K = MUSICAL NOTE. CONTROL/N & D gives you both halves of the ATARI LOGO on ST. You can experiment to see if any other characters are useful to you. I don't know if this applies on other art packages or machines other than the ST.

In issue 7, Martin Sullivan asked about a "jet pack" type effect as used in "Dark Side". Well, Martin, what you want to use is the MODE option. This is set to 1 initially, which is WALK. Setting it to 2 or 3 will give you different types of flight. You can set a control to change between walk and fly modes. For more detail, see pages 49 and 64 of your instruction manual, where you will see on the latter that the default control key is "V".

Someone once asked if it was possible to rotate objects during animation. Well, as far as I know, it is not, but it IS possible to give the ILLUSION of rotation by making symetrical objects and using the VIS and INVIS commands. This is quite difficult to explain, but any ST users wanting a demonstration of what I mean are advised to study the moving robots in the KAKRIVS game I've just created, as they use this technique. There is actually an advantage to using this method too: carefully selected side-shading of objects remains in the correct orientation!

To save memory when making "rooms": Colour the ground the colour you want the floor to be. Keep the horison ON. Colour the sky the shade you want the ceiling. Delete the ground cuboid. Now, providing your player does not have the option to fly (easily fixed), you only need four cubes (the walls) instead of six for walls, floor and ceiling. Just because there is no cuboid 1, it does NOT mean the player has nothing to stand on! Try it and see.

TIPS by *David Lacey* - COMMODORE 64

If you have an ACTION REPLAY cartridge you can use it to "freeze" your environments and print screen-shots from it by saving it as an ART STUDIO file.

A tip for clearing the Kit's memory without having to re-load the whole editor again. Just have a file on your Kit disk (eg. Kit-data 1), which is saved completely empty. When you want to clear the memory just load this file in - saves loads of time.

TIP by *Alan Holloway* - CPC6128 PLUS

A good Public Domain program is GPAINT. You can use it to design borders, load the Kitscreen and edit it.

STEP-BY-STEP GUIDE

MAKING INTRODUCTORY LOADING SCREENS ON THE PC!
By *Mieke Van Der Poll* - PC

See also the beginning of the Amiga guide to loading screens featured in the last newsletter.

It is a pity that you cannot use the F2 function key within the 3D Kit on the PC to save pictures, which you can do on the Amiga. It would be possible to even draw your borders within the Kit. Making pictures on the PC for loading screens can be done with any paint package that you have. What gives the difficulty is the program with which you will load your pictures to view them on screen and if you will be able to exit it. With the shareware programs EGAdmp or VGAdmp you can grab a picture out of a paint program. The conversion program EGA2VGA will convert any viewable EGA 640x350x16 colour and 640x480x16 (EGA/VGA) into a real VGA 320X200X256 colour picture. In your paint package you have to draw in one of these two modes. The conversion program converts the picture in a bloadable file which you can then load with VGAbld.exe and press ESC to get pack to DOS. You have to put an instruction on your picture: Press ESC.

The other utility I have, showit.exe, shows only pictures which have a .GIF extention. Now if you have a paint package with another extension you need a program to convert the extension such as Graphics Workshop. You can put an instruction on your picture: Press any key or Press ESC. By making a batchfile and calling it for instance start.bat you can put in all the relevant commands as shown below:
Take any text editor and type in the following text:

Using VGA.bld.exe	Using Showit.exe
Echo off	Echo off
cls	cls
vgabld pic1	showit pic1
vgabld pic2	showit pic2
vgabld pic3	showit pic3
Runvga gamename.run	Runvga gamename.run

Save the batchfile as start.bat or game.bat and copy it on a blank formatted 5.25" disk. Copy the pic.files, pic.utility, runvga.exe and your game.run file on the same disk. By typing the name of the .bat file you can start everything running.

As not everyone boots his computer with a 5.25" disk (some have their 3.5" drive as the a:drive), there is no need to make a bootable disk. If you want to do so anyway, you can make your disk bootable when you format it with the command formata:/s or format b:/s and afterwards copy the command.com to the a:- or b:- drive. You then have to change your start.bat in autoexec.bat. Then you have a problem with formatting low density disks on high density drives together with the different DOS-versions. When you have DOS 3.3 or 3.31 and high density drives for both 5.25" and 3.5" high density disks, you format a 720 kB 3.5" disk with the command: format a:/n:9 /t:80 or format b:/n:9 /t80. A 5.25" disk 360 kB with the command: format a:/4 or format b:/4. When you have DOS 4.0 or DOS 5.0 you use: format a:/720 or format b:/720 for 3.5" disks 720 kB and format a:/360 or b:/360 for 5.25" disks 360 kB. To make them bootable add the parameter /s to the command and afterwards copy the command.com to the relevant disk. These are the formats I use.

Next issue Mieke shows us how to offer a choice of instructions or entry into the game on the loading screen for Amiga so stay tuned!

PUBLIC DOMAIN LIBRARY
LATEST ADDITIONS TO THE LIST!

MESSAGE DEMO ROUTINES by J.Hayes for the AMIGA.
DATAFILE, BORDER and OBJECT. This disc contains an excellent suite of routines showing how to scroll descriptive messages when objects are activated. Written as a small game in which you must escape from the cold. Also includes the Inventory Routines. The disk features the routines which will be serialised in the Newsletters for the benefit of other machine owners over the next couple of months. Added bonus on the disk is the best 3D black cat I've ever seen! An excellent and extremely useful addition to your collection of routines.

LANDSCAPE DEMONSTRATION DISK by J.Hayes for the AMIGA.
DATAFILE and BORDER. This datafile gives you the impression of a never-ending landscape! There is an instruction sheet supplied with the disk which explains how everything works. To make it more interesting the files are presented in the form of a short game where you must locate and obtain a hidden gold bar. I was not only impressed with the whole landscape and the feeling of space but I had loads of fun trying to locate the gold too! The border screen contains a fantastic compass which shows which direction you are facing at all times. The routines will also be serialised over the next couple of issues of the newsletter so everyone can make use of them. Sorry but both these routines are a bit too big to fit in one newsletter.

FLIGHT SIMULATOR DEMO by Thomas Stufe for the AMIGA.
DATAFILE and BORDER. This is an extremely effective demonstration of how a flight simulator can be programmed. You can rise up to a height which appears to be miles above the landscape who's features appear as small dots far below. There are quite a few areas including Egypt, Desert, Hill Country, Lake, Tanks etc. The routines will be serialised in the Newsletters so that everyone can build up their own flight simulators if they wish.

BUILDINGS by Allan Hern for the AMIGA.
DATAFILES. Allan wrote to say that he would like to see more PD disks offering people the chance to view detailed models of various famous buildings, landmarks and monuments. To start the ball rolling he has supplied a disk full of extremely well created buildings for you to view from all angles. These include Stone Henge, Salisbury Cathedral, castles and, what I guess to be homes that Allan has lived in – all of which are beautifully created. The file WW on the disk is a whole complex to explore – I don't know what it is supposed to represent. Perhaps the place where Allan works? All finely created – I enjoyed exploring them all.

KAKRIVS by Peter D Ward for the ATARI ST.
DATAFILE, BORDER, USEFUL OBJECTS FILE and README FILE. This is the new sequel to SPEILRAUM and a very worthy sequel it is too. Take your Tardis to enable you to explore Kakrivs and you are in for a treat. Watch out for Daleks though – mind you, if they do get you, a nice touch is that you don't die but take a nice little holiday in the company of a Terry Pratchett fan. There is lots to see and do if you manage to arrive in the right place. Correct study and operation of the Tardis should ensure you avoid no-mans land! Have fun – I did!

SPEILRAUM V1.2 by Peter D Ward for the ATARI ST.
This is the updated version of Peter's game. Anyone who would like to exchange their disks for the updated version can either send the old

version to me or to Peter but please do enclose S.A.E.

LIGHTING EFFECTS by Robin Ball for the ATARI ST.
DATAFILES and INTRO CONCEPT DEMO MAKER. This disk features all the lighting effects that were in the last issue of the Newsletter plus quite a few more. The Clubgame is also on the disk and, not unexpectedly, our Robin has really designed it well – it knocks spots of my puny effort! – the castle look really authentic and the dungeons are really eerie. These datafiles together with the Demo Maker make this a useful addition to your collection.

THE MAZE by David Sambrook for the Atari ST.
RUNNABLE PROGRAM. I owe you all, especially David, an apology. I said in the letters that I didn't have the updated version of The Maze. Well, as you can all now see, I have! At last I can review it as it now runs on a half meg Atari ST so everyone can join in the fun. And I DO mean fun. This really is a proper maze. You enter the maze to find that there are four keyholes near a doorway which obviously means that you have to find them. Sounds easy but it is not as each of the keys is hidden in a devilishly cunning maze zone! Each zone contains a different kind of maze puzzle which has to be solved within a time limit! This game is what I call ADDICTIVE!! I can't wait for my next free session to get back to this fantastic game.

WEST ONE by Frank Carr for the ATARI ST.
This adventure game casts you in the role of Harris Tweed (agent 005.5). The evil General Dralon is holed up in the West One Complex and you have got to find him and dispose of him. The game starts with a nice loading screen followed by instructions which then takes you directly into the game. The border is very nicely laid out and easy to operate with an eye icon to examine things, a hand icon to get items etc. You are, thankfully, supplied with a gun which you soon find you need – in the good old spy tradition – so use it. As with all true adventure type games it pays to examine everything carefully for useful clues. The game is beautifully designed with realistic areas to explore. Lots to see and do to keep you happily coming back for more!

OTHER DISCS IN THE LIBRARY:
Key to what's on the disc/s: G=Complete Game. D=Datafile. B=Border. R=Runnable Program. 3DU=3D Kit Utility. U=Other Utility. O=Objects.

SOUND SAMPLES (3DU) by Mieke Van Der Poll - AMIGA.
INVENTORY ROUTINE (3DU) by J. Hayes - AMIGA.
SPEILRAUM V1.2 (G/D/B/R/O) by Peter Ward - ATARI ST.
BORDERS DISK (3DU) by Robin Ball - ATARI ST.
DARKNESS CALLS (G/R) by James Yusuf - AMIGA.
DARKNESS CALLS OBJECTS DISK (O) by James Yusuf - AMIGA.
PLANET OF THE DALEKS (G/D/B) Game by Steve Hilder - AMIGA
E.F.T.P.O.T.C.M. (G/R/U) by Andrew Herbert-AMIGA
AMIGA BORDERS (3DU) by A.J.Bevan - AMIGA.
INFILTRATION (G/R) by Robin Ball – ATARI ST.
ESKAPE (G/D/U) by Steven Flanagan - COMMODORE 64.

All the above disks are available from the User Group address at a cost of £1.50 each (UK). Overseas £2.50. All members who send in PD contributions can select freely from the above list as a small thank-you for their contribution and help. Back issue can be sent if preferred or a free issue added to your subscription. PC PD Library can be found on the seperate sheet enclosed with this issue.

STEP-BY-STEP GUIDE FOR SAVING OBJECTS FROM THE KITGAME

TIP FOR BEGINNERS (16 AND 32 BIT USERS)

By *Mieke Van Der Poll* - AMIGA/PC

The Kitgame is a real provider of all kinds of objects ready to use in your own environments and games.

Before you start saving those objects you have to bear a few things in mind, though, (it isn't that simple).

1. Always work with a COPY of your original 3DCK-disk.

2. Have a blank formatted disk on hand.

3. In each area firstly look in which local scale the objects are created.

   Go into the area menu and click on EDIT AREA. Choose the area you are in and click the TICK icon. Make a note of the Local Scale number. Click on the OK to leave the Edit window.

4. There are two ways in which you can save objects from the Kitgame:
   - either make groups yourself from parts you want to combine, (for instance the stairs next to the Kiosk in area 1)
   - or look for already made groups in the different areas.

   When you choose Edit from the shortcut menu you are presented with all the objects and groups in that area. When clicking on a group-number twice you can edit it, so back in the editor choose HIGHL(ight) to see where it appears in the view window.

5. TO MAKE A GROUP: Click on Create in the shortcut menu and click on Group. You are presented with a group-nimber (or more than one if there are already groups in the area). Click twice on the last line that appears, then click on the objects in the view window that you want to include in your group. The numbers are highlighted. Click on the TICK icon and your group is ready either to edit or save. If there are a lot of objects in an area you have to scroll sometimes through the different numbers to find the ones highlighted (as is the case on the Amiga).

6. TO SAVE A GROUP: Put your blank disk in a drive. Select Save Object from the File menu and select your group-number and click on it twice. When the File Requester appears, click on the drive with the blank disk in it, click in the fileheader and delete the name (if any) next to it. Type in your own object name and press ENTER. Click on OK and the object will be saved to disk.

When you save a group look at its coordinates, because at that place it will appear in a blank area when you load it in.

7. Sometimes sides of objects may be coloured invisible. So if you saved an object to disk and if, after loading it in again, you cannot see the exact shape of it, colour all sides of the cubes, pyramids, etc.

8. It may be that some parts of a group are invisible initially. This is, for instance, the case with the shark and the fish. If you save them as an object and load them in you will see in the attributes of some triangles that they are invisible. They are, however, placed on the exact place of the visible ones, so cannot be made visible. This has to do with the animation used in the Kitgame to let them really swim. You can either delete them or leave them as they are (and perhaps study the animation routine in the Sea area).

9. As there are different area (local) scales used in the Kitgame, it is best to save your object together with the l ocal s cale i.e. stair(s) ls4 or roomls12. You can then edit your area first, choose Edit Area Menu, click on the Local Scale number, type in the wanted scale number, press Enter and click on OK. Press ESC to reset the environment and then load in your object.

A good example of a "small area" is the area of the Changing Room, scale 12. When you go into its Entrance 1, you can see it is a small room compared, for instance, with the interior of the Kiosk (scale 6).

You can save this room by creating a group and adding the four walls and the ceiling to it. You now have your globals for an area scale 12. You can obtain a bigger room when you alter the area scale but you will notice that you yourself become smaller looking up against huge walls. In this way you can create some interesting effects with other objects too.

When you load the Room-object in onscale 12 you don't see every wall because parts of it are coloured invisible. When you colour them in you see you have a closed environment but you cannot yet go inside it.

Now the best way to make an entrance is to walk to a wall until you bump against it. The easiest way is to stand in front of the wall where your rotation is 0000 in every direction. Create and Entrance (Entrance 002). In the Area Menu, select Edit Entrance, choose Entrance 002 by clicking twice on it and you will see the coordinates of it. In the first line look at the most right number. If it is, for instance, 0400 then click on it and add 500 to it, so type 0900. PressEnter and click on OK. Then choose GOTO Entrance in the Area Menu. Click on Entrance 002 twice and you are probably in the room now. Move backwards until you collide with the wall behind you and then again edit Entrance 002 and put in the coordinates you see in the information bar under the view screen.

****

16/32 BIT ROUTINES

PROGRAMMING A FLIGHT—SIMULATOR
PART ONE

By *Thomas Stufe* - AMIGA

HOW TO PROGRAM A LARGE LANDSCAPE:

One of the problems appearing when programming a flight (or tank or whatever) simulation is that there are only small areas to use as a landscape. Of course it is possible to compensate it partly by creating very small objects, such as small buildings, tanks, aircraft, SAMs... But that does not seem a satisfactory solution for everyone. So the following routine might offer another way.

The routine links a group of areas to form a large landscape. The first thing to do is to develop the landscape on paper. Like this:

On each area one entrance is sufficient and its position isn't important.

The following variables are necessary:

seca , secb - coordinates of the current area
x , y , z - V0, V1 (Alt), V2 - Position of aircraft.
xr, yr , zr - V3, V4 , V5   - View angle.

x,   y, z - intermediate memory for x,y,z.
xr, yr, zr - intermediate memory for xr,yr,zr.

f - Flag variable from the game - I use only the first bit.

It is necessary to initialise the variables seca and secb (pointing to the start area, the area containing the base). Bit 1 of f has to be 0 on each call of this routine, you cannot use it in other parts of the game. That's a rough outline of the routine (of course in a general condition):

Call:

```
IF X < 200
OR X > 8000
OR Z < 200
OR Z > 8000 THEN:
```

save the view position and -angle:

```
SETVAR X = X'
       Y = Y'
       Z = Z'
       XR = XR'
       YR = YR'
       ZR = ZR'
```

Calculate new area position, new view position:

```
IF x < 200, THEN secb=secb-1, x'=8000, ENDIF
IF x > 8000, THEN secb=secb+1, x'=200, ENDIF
IF z < 200, THEN seca=seca-1, z'=8000, ENDIF
IF z > 8000, THEN seca=seca+1, z'=200, ENDIF
```
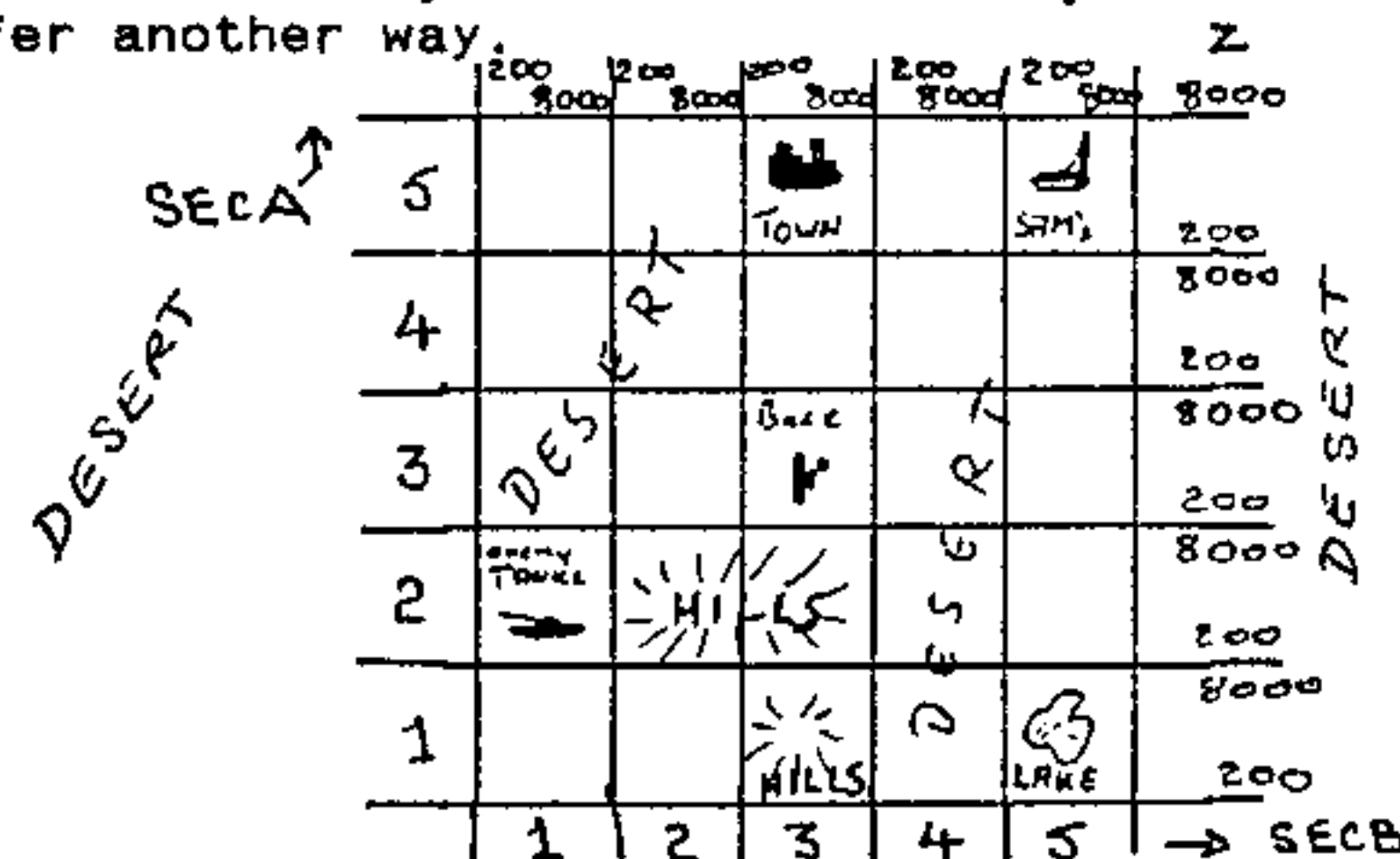
New area (for this example):

```
IF seca=1, THEN
IF secb=3, GOTO area "Hills"
set bit 1 of f
ENDIF
IF secb=4, GOTO area "Lake"
set bit 1 of f
ENDIF
IF seca=2, THEN
IF secb=1, GOTO area "Tank platoon"
set bit 1 of f
ENDIF
IF secb=2 or secb=3, GOTO area "Hills"
set bit 1 of f
ENDIF
ENDIF
IF seca=3, THEN
IF secb=3, GOTO area "Base"
set bit 1 of f
ENDIF
ENDIF
IF seca=5, THEN
IF secb=3, GOTO area "Cairo South"
set bit 1 of f
ENDIF
IF secb=5, GOTO area "Sam's"
set bit 1 of f
ENDIF
ENDIF
```

That means: Bit 1 of f is 0, if none of the above mentioned areas is entered and that means, for my example, that the aircraft is flying ever dull desert:

```
IF ANDV (1,f)         : if bit 1 is set
THEN SUBVAR (1,f)     : then delete it
ELSE                  : else
GOTO area "Desert"    : go to the desert
ENDIF
```

This spares a lot of work as one has to program the most used area (empty desert, sea, grassland...) only once. Now long-distance flights over hundreds of kilometres of desert are no problem any longer. Now it is necessary to give the saved view position and -angle to V0 - V5, as the aircraft has to appear exactly on the right point in the new area:

```
SETVAR x' =: x
       y' =: y
       z' =: z
       xr' =:xr
etc, etc
```

When creating the landscape it is necessary to make sure that the objects are not placed near the border of the area. Imaging the face of a pilot if suddenly a big mountain appears in front of him. The transformation from one area to another is abrupt enough as it is. Make sure that all areas use the same sky colour etc.

It is possible to set any flags =0 for further use on each call of this routine:

```
IF ANDV (f,2^(x-1))        : if bit x set
THEN SUBVAR (2^(x-1),f))   : then delete it.
ENDIF
```

These flags will be deleted on each transformation from one area to another and it is possible to initialize actions only once on each area (the start of a SAM, for instance or the assault of an enemy aircraft, or...).

Area condition:

```
IF ANDV (f,2^(x-1))        : if bit x set then
THEN END ENDIF             : go ahead.
ADDVAR (2^(x-1),f)         : lock up after using it once,
                           : do the following orders only
                             once.
```

In comparison to commercial software, this landscape may not be regarded as extremely good-looking but we have to keep in mind that the 3D Kit was not developed primarily for simulations.

NEXT ISSUE THOMAS SHOWS HOW TO PROGRAM WEAPON SYSTEMS FOR A FLIGHT SIMULATOR SO WATCH THIS SPACE!

MESSAGE HANDLING
By *J. Hayes* - AMIGA

Here is a routine which allows messages to be issued to the player. It uses only one line of a single text instrument for output, but the messages themselves can be of any length. A message needs to be organised into convenient "sentences" that will fit the instrument. The routine will take each sentence in turn, print it to the screen, then wait for a delay before printing the next. The player is still free to interact with the environment while this occurs.

A message must be limited to a set number of sentences, as the routine will work around this principle. However, this isn't the drawback it seems as any limit can be used. Once a message is composed of its component sentences it can be assigned to its own block. The next message will occupy another block and so on. They can be in any order, providing each block starts at the correct point. The advantage of the routine is the ability to expand a message by concentrating on the text involved rather than altering the parameters of the main routine. It will take care of itself, once the limit initially decided upon is adhered to.

EXAMPLE OF THE MESSAGE STRUCTURE:

SENTENCE LIMIT	BLOCK 1		BLOCK 2	etc
	MESSAGE 1 SENTENCES		MESSAGE 2 SENTENCES	
(examples)	Start	To	Start	To
5	1	5	6	10
9	1	9	10	19
20	1	20	21	40

etc...

OR: SENTENCE START = (MESSAGE - 1) X SENTENCE LIMIT + 1

Although a message will occupy one block, it isn't necessary to define sentences that are not used within it. If a message only consists of one sentence the rest can be ignored. The routine will still count through the block up to the limit, but unless a sentence has been described for it, it will take no notice.

VARIABLES USED:

(Refering to them by name)

Vsent - Sentance Number
       Set initially to the start of a message. It is taken by the
       routine and used to print sentences.
Vsentcount - Sentence Counter.
       Set initially to zero at the start of a message. It is then
       used by the routine to count up to the sentence limit.
Vdelsent - Delay Sentence.
       Handled by the routine. Delays each sentence before next
       is printed.

MESSAGES:

As the routine progresses, it extracts from the message block the next sentence to print and sets it into Vsent. The sentence itself is described in either LOCAL or GLOBAL (General) conditions. It is wise to organise them into seperate conditions (blocks) for each message so that they are easier to send and amend.

If a message is issued from one area only, either by interaction with objects or called from within a Local condition, put the sentences into a Local condition. Each condition (block) can be restarted from 1 with each area. Should a message be required in any area, put it into a Global condition. It must then have assigned to it a unique message block that will not clash with any other sentences anywhere else. It can be called from any point. To clarify:

MESSAGES IN THESE CONDITIONS (order unimportant)

AREA 1	AREA 2	AREA 3 etc	GLOBAL
Message 1	Message 1	Message 1	Void
Message 2	Message 2	Message 2	Void
Void	Void	Void	Message 3
Message 4	Message 4	Message 4	Void

These messages are local to these areas, so the same blocks can be used.

This message is global to every area and must occupy a unique block.

Skip the blocks used for global messages.

Skip blocks used in areas.

Whatever the condition chosen, the format remains the same:

```
IF VAR=? (Vsent,Sentance start) THEN PRINT  ("Text1",n)
ELSE IF VAR=? (Vsent,Sentence start+1) THEN PRINT ("Text2",n)
ELSE IF VAR=? (Vsent,Sentence start+2) THEN PRINT ("Text3",n)
    Repeat for every sentence in  the  message.   Ignore any not used
    and remember the limit. Limit=Sentance start+sentence limit-1.
ENDIF
                n = Instrument number.
```

ISSUE MESSAGE:

To get a message printed, the main routine has to be enabled. This is
achieved with:

```
SETVAR  (Sentance  Start,Vsent)  -point to first message in mess.block
SETVAR (0,Vsentcount)            -reset the limit counter
```

These two commands must be used together.

MAIN MESSAGE ROUTINE Enter in General (Global) Condition.

```
IF VAR>? (Vsent,0) THEN        ┐     - If message still active.
IF VAR=? (Vsentcount,0) THEN   │     - Check if just issued.
SETVAR (1,Vsentcount)          ├-*C  - If so, disable check,
SETVAR (0,Vdelsent)            │     - and reset delay
ENDIF                          ┘
ADDVAR (1,Vdelsent)                  - Increase delay.
IF VAR>? (Vdelsent,25) THEN   >-*A    - If reached *A then,
SETVAR (0,Vdelsent)                  - reset delay.
PRINT (" fill with spaces",n)        - Erase last sentence.
ADDVAR (1,Vsent)                     - Point to next sentence.
ADDVAR (1,Vsentcount)                - Update count.
IF VAR>? (Vsentcount,9) THEN  >-*B    - If count reached limit,
SETVAR (0,Vsent)                     - Disable current message
ENDIF                                  and the routine will remain
ENDIF                                  idle until another is issued.
ENDIF
```

*A = Delay used.
*B = Sentence Limit.
*C = This part is needed to reset the delay if a message is issued
before another has a chance to finish.

MESSAGES IN USE:

Certain actions can be timed to coincide with the appearance of a
sentence. This can either be handled in the message block where the
sentence is described or tested for seperately in another condition.

```
    IF VAR=? (Vsent,5) THEN...
    (whatever...)
    ENDIF
```

Messages issued before others have finished will be printed instead.
This cannot be avoided altogether, but with care they can interrupt
each other without spoiling the overall effect. Actioins that rely on
the appearance of a sentence must be carefully used in this respect.
However, there is a solution!

QUEUED MESSAGES:

This technique puts messages into a queue until the display is free
for them to be seen. A variable - Vwaitmess, stores the bit values
used to represent a message.   A total of 14 global messages and 14
local messages per area can be withheld in this way.

```
        BIT VALUE            1  2  4  8  16  etc
        REPRESENT MESSAGE    1  2  3  4   5
```

With this method, a message is issued from any point with:

```
ORV (Bitvalue,Vwaitmess)        - Provide the Bit value.
SETVAR (area or V8,Vapplymess)  - Point to the area its needed in.
       L(Set to 0 for global)
```

To translate this value into the required message, enter in a global
condition:

```
IF VAR=? (Vsent,0) THEN           - If no message printing and
IF VAR=? (V8,Vapplyarea) THEN     - in correct area
IF ANDV (Vwaitmess,Value1) THEN   - test for correct message
SETVAR (Sentence start,Vsent)     - and translate it.
SUBVAR (Value1,Vwaitmess)         - remove from queue
ELSE IF...
    Repeat for other messages applying to this area (14 max.)
ENDIF
ELSE IF...
    Repeat above for another area
ELSE...
    Repeat above for global (14 max.) - treat as an area.
ENDIF
SETVAR (0,Vsentcount)             - Reset count as before.
ENDIF
```

Text is entered in the same format as before, ensuring global messages
occupy a unique block. This addition to the main routine will solve
the problem of messages interfering with those already printing. If
the display is free and there is a message waiting it will be seen and
will apply to the selected area the user is currently in. Otherwise
it will be withheld until ready.   Should this area change suddenly
from where a message was needed, it will not be seen. Should the area
be returned to and the original setting remain unchanged, it will be
seen.

I have prepared a disk for the User Group PD Library which will enable
Amiga users to see at first hand how the messages work. I hope this
routine will be of some use.
****

HALL OF FAME

My sincere thanks to all the following members who took the time and
trouble to send in contributions for the newsletters in order to help
their fellow members:
M.HARRIS, THOMAS STUFE, PETER D WARD, TONY HARTLEY, NIGEL ALEFOUNDER,
ALAN HOLLOWAY, J. HAYES, MIEKE VAN DER POLL, PETE SPOONER, GIORGIO
OLIVERI and DAVID LACEY.
Why don't YOU send in a contribution for the next issue and see YOUR
name in the Hall Of Fame?

8 BIT ROUTINES

COMPARING VARIABLE VALUES
By *Steven Flanagan* - COMMODORE 64

Following on from my article in the last newsletter, another thing I discovered was how to compare one variable with another. The CMPV command only allows you to compare a variable with a fixed number, but what if you want to compare one variable with another? The following routines compare variable 1 with variable 2. If they are both the same, variable 3 will be set to 1. The routines are very complex so spend time reading them to understand how they work.

PROC 1

```
TESTV   1   4   -   Tests if the variables have already been XOR'd.
IFEQ            -
THEN            -
ELSE            -
SETV    0   3   -   If they have then the two variables are different.
SETV    0   5   -   So reset everything to start again.
ENDIF           -
XORV  255   1   -   This toggles every bit in variables 1 and 2.
XORV  255   2   -
XORV    1   4   -   Makes a record that variables are toggled.
END
```

LOCAL or GENERAL CONDITION 2

```
CMPV    0   5
IFGT
THEN
END
ENDIF
TESTV   1   1
IFEQ
AND
TESTV   1   2
IFEQ
THEN
ELSE
CALL    1
END
ENDIF
SETV    1   5
TESTV   1   4
IFEQ
THEN
ELSE
ANDV    1   4
CALL    1
END
```

LOCAL or GENERAL CONDITION 3

```
CMPV    1   5
IFEQ
THEN
ELSE
END
ENDIF
TEST    2   1
IFEQ
AND
TEST    2   2
IFEQ
THEN
ELSE
CALL    1
END
ENDIF
SETV    2   5
TESTV   1   4
IFEQ
THEN
ELSE
ANDV    1   4
CALL    1
END
```

LOCAL or GENERAL CONDITION 4

```
CMPV    2   5
IFEQ
THEN
ELSE   (cont.1st col.next page)
```

LOCAL or GENERAL CONDITION 5

```
CMPV    3   5
IFEQ
THEN
ELSE   (cont.2nd col.next page)
```

```
END
ENDIF
TESTV   4   1
IFEQ
AND
TESTV   4   2
IFEQ
THEN
ELSE
CALL    1
END
ENDIF
SETV    3   5
TESTV   1   4
IFEQ
THEN
ELSE
ANDV    1   4
CALL    1
END
```

```
END
ENDIF
TESTV   8   1
IFEQ
AND
TESTV   8   2
IFEQ
THEN
ELSE
CALL    1
END
ENDIF
SETV    4   5
TESTV   1   4
IFEQ
THEN
ELSE
ANDV    1   4
CALL    1
END
```

LOCAL or GENERAL CONDITION 6

```
CMPV    4   5
IFEQ
THEN
ELSE
END
ENDIF
TESTV  16   1
IFEQ
AND
TESTV  16   2
IFEQ
THEN
ELSE
CALL    1
END
ENDIF
SETV    5   5
TESTV   1   4
IFEQ
THEN
ELSE
ANDV    1   4
CALL    1
END
```

LOCAL or GENERAL CONDITION 7

```
CMPV    5   5
IFEQ
THEN
ELSE
END
ENDIF
TESTV  32   1
IFEQ
AND
TESTV  32   2
IFEQ
THEN
ELSE
CALL    1
END
ENDIF
SETV    6   5
TESTV   1   4
IFEQ
THEN
ELSE
ANDV    1   4
CALL    1
END
```

LOCAL or GENERAL CONDITION 8

```
CMPV    6   5
IFEQ
THEN
ELSE
END
ENDIF
TESTV  64   1
IFEQ
AND
TESTV  64   2 (cont.1st col.n.p.)
```

LOCAL or GENERAL CONDITION 9

```
CMPV    7   5
IFEQ
THEN
ELSE
END
ENDIF
TESTV 128   1
IFEQ
AND
TESTV 128   2  (cont.2nd col.next page)
```

```
IFEQ                        IFEQ
THEN                        THEN
ELSE                        ELSE
CALL    1                   CALL    1
END                         END
ENDIF                       ENDIF
SETV    7   5               SETV    0   5
TESTV   1   4               SETV    1   3
IFEQ                        TESTV   1   4
THEN                        IFEQ
ELSE                        THEN
ANDV    1   4               ELSE
CALL    1                   ANDV    1   4
END                         CALL    1
                            END
```

The routines test each bit of variable 1 and variable 2 and if both
are the same the program continues to test the next bits in the
variables.

If the two variables are the same, variable 3 will be set to 1 until
the variables are different. If the two variables tested hold
different numbers, variable 3 will be set to 0. You can change the
variables to be compared by altering the variables tested in the
conditions.

The routines do not have to be in the local or general numbers that I
have labeled them, but they should be in the same order as they are
shown. Unfortunately, the above routine continually inverses the
values of the variables being compared - in the above case variables 1
and 2. This means that if variable 1 was the player's strength and
had a value of 10 the routine would constantly change the value to its
inverse value which is 245. If this variable had an instrument, the
instrument would show this constant jumping. Testing this strength
value to see if it is over the limit would also be a problem as the
inversed value of the strength may be tested. There is a simple way
to solve this, all you have to do is transfer the values of the two
variables to be tested and store them in two storage variables which
can be compared.

For example, if we want to compare variables 1 and 2 but don't want to
change their values in the process, we can first transfer the value of
variable 1 into variable 3 and variable 2 into variable 4. The
compare routines could now compare variables 3 and 4. To do this you
would need two more routines before the compare routines so the
routine number shown above need to be added with 2, so routine 5 would
become routine 7. Routines 1 and 2 should be as follows:

ROUTINE 1: Transfer the value of variable 1 to variable 3.
ROUTINE 2: Transfer the value of variable 2 to variable 4.
(The information needed to program these routines are given in the
transfering variable values article in the previous issue.)

Routines 3 and above should contain the compare routines to compare
variables 3 and 4.

*(My thanks to Steven for this excellent routine. I had the pleasure of
meeting Steven in person a month ago when we spent a delightful
evening delving into 3D Kit together. What a nice fellow he is..Mandy)*

GEOGRAPHICAL LINKER
And other tips by *M. Harris* - SPECTRUM

I write yet again! Just this once though, I have decided not to slag
off 3DCK at all. Basically all I want to do this time is pass on a
bit of info and a totally crucial routine that will leave people
wondering why the hell they hadn't written it! Ok then, first up is
the info. This is for the Spectrum version but should work for the
other 8 bit version as well.

Right then, if you need to force a redraw but don't need it instantly
thereby slowing the program down, use TOGVIS 255 or any other
undefined object number. The second bit of info ties in with the
following routine. If you want to get to another area with your
viewpoint/coordinates intact use GOTO 0 AREA. Now the routine. This
should be set up as 2 Procedures, the second procedure using the
numbers in brackets.

```
              X-E/W   Z-N/S
CMPV    000   113    (117)      XORV    031   113   (117)
IFEQ                            CMPV    000   113   (117)
THEN                           IFEQ
SETV    184   112    (116)      THEN
SETV    031   113    (117)      SETV    008   112   (116)
END                            END
ELSE                           ELSE
SETV    008   112    (116)      SETV    184   112   (116)
SETV    000   113    (117)      END
END
```
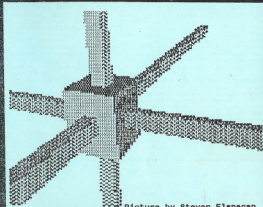
/\/\/\/\/\/\/\/\/\/\/\
Smartass method!

Personally I prefer the one on the left. Anyway to use it you need to
set up 4 invisible walls in the globals area. The walls should have a
maximum height and length and a thickness of zero. When you want to
leave an area use:

```
IFHIT EAST-WALL           (X-Wall is the global No of X-Wall)
THEN
CALL PROC 1               (Proc 1 is assumed as E/W toggle)
GOTO 0 EAST-AREA
ENDIF
IFHIT WEST-WALL
THEN
CALL PROC 1
GOTO 0 WEST-AREA
ENDIF
IFHIT NORTH-WALL
THEN
CALL PROC 1               (Proc 2 is N/S toggle)
GOTO 0 NORTH-AREA
ENDIF
IFHIT SOUTH-WALL
THEN
CALL PROC 2               (For this routine to work really well
GOTO 0 SOUTH-AREA          it is best to hack out the "bump" SFX!)
END
```
(obviously you need to substitute the number of your objects which
represent your walls and the area numbers.)

Picture by Steven Flanagan

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